CLAIMS:

1. An electronic device with a micro-electromechanical switch, comprising:

- a piezoelectric element (10) with a piezoelectric layer (12) located between a first and a second electrode layer (11, 13), with at least one electrode (52, 42) being located in each of said electrode layers (11, 13);
- a first and a second MEMS electrode (42, 21), said first MEMS electrode (42) being located on a surface of the piezoelectric element (10) and said second MEMS electrode (21) being located on the surface of a substrate (20), so that the first MEMS electrode (42) moves away from and/or towards the second MEMS electrode (21) under the application of an actuating voltage to the piezoelectric element (10),

characterized in that at least one of the electrode layers (11, 13) is structured into electrodes (41-43; 51-53) while defining a displacement area in the piezoelectric element (10), in which displacement area the first MEMS electrode (42) is located and which displacement area is, under the application of at least one actuating voltage to the electrodes (41-43; 51-53), capable of strong displacement away from and/or towards the substrate (20) in relation to the rest of the piezoelectric element (10).

2. A device as claimed in claim 1, characterized in that the piezoelectric layer (12) has been polarized during manufacture in a polarization mode, and in that the electrodes have been so defined that an actuating voltage causing a local contraction of the piezoelectric layer (12) can be applied locally.

3. A device as claimed in claim 1 or 2, characterized in that the piezoelectric layer (12) curves to the left on one side of the displacement area and to the right on an opposite side.

4. A device as claimed in claim 1, characterized in that the piezoelectric element (10) is clamped to mechanical supports on a first and an opposite second side (30, 31).

5. A device as claimed in claim 4, characterized in that the electrodes are defined symmetrically around the displacement area.

6. A device as claimed in claim 1, characterized in that each of the first and the second electrode layers contains at least two electrodes.

7. An electronic device as claimed in claim 1, characterized in that the second electrode layer (13) is a continuous metal layer while the first electrode layer (11) contains at least three electrodes (41, 42, 43), of which the middle electrode (42) is essentially located opposite the second MEMS electrode (21).

8. An electronic device as claimed in claim 7, characterized in that the first electrode layer (11) is located on the surface facing the second MEMS electrode (21).

9. A method for the preparation of an electronic device as claimed in claim 1, wherein the piezoelectric element (10) is set to a polarization mode by the application of actuating voltages to the electrodes, wherein the piezoelectric layer (12) is so polarized that the piezoelectric layer (12) locally expands and contracts when suitable actuating voltages are applied in the operating mode.

10. An application of an electronic device as claimed in claim 1, wherein the actuating voltages are so applied to the electrodes that the piezoelectric layer (12) locally expands and contracts.

11. An application as claimed in claim 10, wherein the actuating voltage effecting a local contraction of the piezoelectric layer is lower than the actuating voltage in the direction of the polarization which has already been introduced.